

# AC100E PART B

Chemwatch Material Safety Data Sheet

Issue Date: 6-Dec-2007

NC317ECP

CHEMWATCH 4929-88

Version No:2.0

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### PRODUCT NAME

AC100E PART B

### SYNONYMS

"hardener adhesive system Part B cartridge"

### PROPER SHIPPING NAME

ORGANIC PEROXIDE TYPE E, SOLID

### PRODUCT USE

Adhesive system applied by a cartridge.

### SUPPLIER

Company: Powers Fasteners Australasia Pty Ltd

Address:

Factory 3, 205 Abbots Road

Dandenong South

VIC, 3175

AUS

Telephone: +61 3 8787 5888

Telephone: +1 800 677 872 (freecall)

Fax: +61 3 9878 5899

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## Section 2 - HAZARDS IDENTIFICATION

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### STATEMENT OF HAZARDOUS NATURE

**HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.**

### POISONS SCHEDULE

None

### RISK

Risk of explosion by shock friction fire or other sources of ignition.

Contact with combustible material may cause fire.

Irritating to eyes.

May cause SENSITISATION by skin contact.

Very toxic to aquatic organisms may cause long- term adverse effects in the aquatic environment.

May cause harm to the unborn child.

Possible risk of impaired fertility.

### SAFETY

Keep locked up.

Keep away from combustible material.

In case of insufficient ventilation wear suitable respiratory equipment.

Avoid exposure - obtain special instructions before use.

To clean the floor and all objects contaminated by this material use water and detergent.

This material and its container must be disposed of in a safe way.

Keep away from food drink and animal feeding stuffs.

Take off immediately all contaminated clothing.

In case of contact with eyes rinse with

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Section 2 - HAZARDS IDENTIFICATION

plenty of water and contact Doctor or Poisons Information Centre.  
If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre (show this container or label).  
Use appropriate container to avoid environment contamination.  
Avoid release to the environment. Refer to special instructions/ safety data sheets.  
This material and its container must be disposed of as hazardous waste.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
dibenzoyl peroxide	94-36-0	20-40
butyl benzyl phthalate	85-68-7	5-40
dicyclohexyl phthalate	84-61-7	5-40
silica, dimethylsiloxane treated	67762-90-7	1-10
bisphenol A/ epichlorohydrin resin	25068-38-6	0.1-0.99
bisphenol F/ epichlorohydrin copolymer	9003-36-5	0.1-0.99

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
  - For advice, contact a Poisons Information Centre or a doctor.
  - Urgent hospital treatment is likely to be needed.
  - In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
  - If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
  - If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.
  - Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
  - INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- NOTE: Wear a protective glove when inducing vomiting by mechanical means.

### EYE

- If this product comes in contact with the eyes:
- Immediately hold the eyelids apart and flush the eye with 2% sodium carbonate solution or 5% sodium ascorbate solution then wash continuously for at least 15 minutes with fresh running water.
  - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
  - Transport to hospital (or doctor) without further delay.
  - Removal of contact lenses should only be undertaken by trained personnel.

### SKIN

- If skin or hair contact occurs:
- Immediately flush body and clothes with large amounts of water, using safety shower if

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Section 4 - FIRST AID MEASURES

available.

- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

### NOTES TO PHYSICIAN

Treat symptomatically.

Toxic myocarditis may follow ingestion of oxidizing agents such as peroxides.

#### BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for shock.
- Anticipate seizures .
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- DO NOT attempt neutralisation as exothermic reaction may occur.
- Skin burns should be covered with dry, sterile bandages, following decontamination.

#### ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994.

## Section 5 - FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

FOR SMALL FIRE:

- Water spray, foam, CO2 or dry chemical.
- DO NOT use water jets.

FOR LARGE FIRE:

- Flood fire area with water from a distance.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.

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## Section 5 - FIRE FIGHTING MEASURES

- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- Extinguishers should be used only by trained personnel.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- If fire gets out of control withdraw personnel and warn against entry.
- Equipment should be thoroughly decontaminated after use.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Do not approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 1000 metres in all directions.

### FIRE/EXPLOSION HAZARD

- Will not burn but increases intensity of fire.
- May explode from friction, shock, heat or containment.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- Heat affected containers remain hazardous.
- Contact with combustibles such as wood, paper, oil or finely divided metal may produce spontaneous combustion or violent decomposition.
- May emit irritating, poisonous or corrosive fumes.
- Combustion/decomposition may produce acrid/toxic fumes of carbon monoxide (CO).
- Organic peroxides provide internal oxygen for combustion, so burn intensely.
- Simple smothering actions are not effective against established fires.

Decomposition may produce toxic fumes of:

carbon dioxide (CO<sub>2</sub>).

nitrogen oxides (NO<sub>x</sub>).

other pyrolysis products typical of burning organic material.

Avoid reaction with acids, alkalis, oxidising and reducing agents, metals and metal oxides, and combustible materials.

Alkalis cause rapid decomposition of benzoyl peroxide with generation of large volumes of carbon dioxide gas (CO<sub>2</sub>) and may pressurise containers.

Avoid contact with copper, brass, lead and zinc.

### FIRE INCOMPATIBILITY

- Avoid storage with reducing agents.
- Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous.

Avoid reaction with acids, alkalis, oxidising and reducing agents, metals and metal oxides, and combustible materials.

Alkalis cause rapid decomposition of benzoyl peroxide with generation of large volumes of carbon dioxide gas (CO<sub>2</sub>) and may pressurise containers.

Avoid contact with copper, brass, lead and zinc.

### HAZCHEM: 2W

### Personal Protective Equipment

Gas tight chemical resistant suit.

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## Section 6 - ACCIDENTAL RELEASE MEASURES

### EMERGENCY PROCEDURES

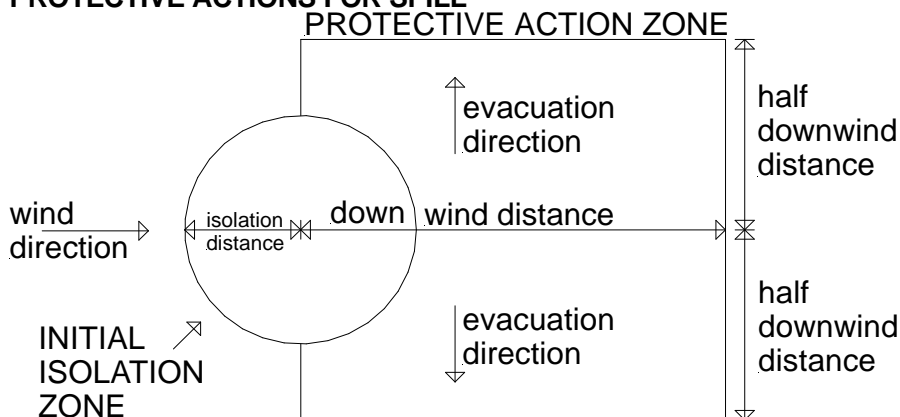
#### MINOR SPILLS

- Clean up all spills immediately.
- No smoking, naked lights, ignition sources.
- Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result.
- Avoid breathing dust or vapours and all contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with dry sand, earth, inert material or vermiculite.
- DO NOT use sawdust as fire may result.
- Scoop up solid residues and seal in labelled drums for disposal.
- Neutralise/decontaminate area.

#### MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.
- No smoking, flames or ignition sources.
- Increase ventilation.
- Contain spill with sand, earth or other clean, inert materials.
- NEVER USE organic absorbents such as sawdust, paper or cloth.
- Use spark-free and explosion-proof equipment.
- Collect any recoverable product into labelled containers for possible recycling.
- Avoid contamination with organic matter to prevent subsequent fire and explosion.
- DO NOT mix fresh with recovered material.
- Collect residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- Decontaminate equipment and launder all protective clothing before storage and re-use.
- If contamination of drains or waterways occurs advise emergency services.

### PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance	25 metres
Downwind Protection Distance	250 metres
IERG Number	32

### FOOTNOTES

1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone

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### Section 6 - ACCIDENTAL RELEASE MEASURES

assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.

2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.

3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.

4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".

LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.

5 Guide 145 is taken from the US DOT emergency response guide book.

6 IERG information is derived from CANUTEC - Transport Canada.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

### Section 7 - HANDLING AND STORAGE

#### PROCEDURE FOR HANDLING

- Avoid personal contact and inhalation of dust, mist or vapours.
- Provide adequate ventilation.
- Always wear protective equipment and wash off any spillage from clothing.
- Keep material away from light, heat, flammables or combustibles.
- Keep cool, dry and away from incompatible materials.
- Avoid physical damage to containers.
- DO NOT repack or return unused portions to original containers. Withdraw only sufficient amounts for immediate use.
- Contamination can lead to decomposition leading to possible intense heat and fire.
- When handling NEVER smoke, eat or drink.
- Always wash hands with soap and water after handling.
- Use only good occupational work practice.
- Observe manufacturer's storing and handling directions.
- Mix only as much as is required.
- DO NOT return the mixed material to original containers.
- Avoid cross contamination between the two liquid parts of product (kit).
- If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerisation with gelation and evolution of heat (exotherm) may occur.
- This excess heat may generate toxic vapour.

#### SUITABLE CONTAINER

Type E and F Solid Organic Peroxides, UN 3108, and UN 3110, UN 3118 and UN 3120 are to be packed to the requirements of Packing method OP8 of the UN Dangerous Goods Code, with maximum mass of 200 kg. in a steel, aluminium, plastic drum/ container or plastic inner receptacle in fibreboard or metal outer drum.  
Plastic cartridge.

#### STORAGE INCOMPATIBILITY

- Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous.
- Avoid storage with reducing agents.
- Organic peroxides as a class are highly reactive.

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- They are thermally unstable and prone to undergoing exothermic self-accelerating decomposition.
- Organic peroxides may decompose explosively, burn rapidly, be impact and/or friction sensitive and react dangerously with many other substances.
- Amines and polyester accelerators (cobalt salts, for example) if mixed with organic peroxides / organic peroxide mixtures will cause rapid / spontaneous decomposition with fire / explosion hazard.
- Avoid any contamination.
- Avoid finely divided combustible materials
- Avoid all external heat.
- Avoid mixing or reaction with acids, alkalis, reducing agents, metal powders, metal oxides, transition metals and their compounds.
- Alkalis decompose peroxides / peroxide mixtures and may generate large volumes of carbon dioxide and pressurize containers.
- Avoid contact with copper, brass and zinc (containers or stirrers, for example).

## STORAGE REQUIREMENTS

### FOR MINOR QUANTITIES:

Ensure that:

- packages are not opened in storage area,
- the goods are kept at least 3 metres from sources of heat as well as all other dangerous goods and all other materials which might react with this material might react to cause a fire, a chemical reaction or explosion,
- materials for absorbing and neutralising spills are kept near the storage;
- procedures are displayed at the storage describing actions to be taken in the event of a spill or fire.
- adequate numbers and types of portable fire extinguisher are provided in or near the storage area.

### FOR PACKAGE STORAGE:

- If the material is stored in an indoor fireproof cabinet, the cabinet must be vented to outside the building containing the cabinet.
- Packages must be protected from exposure to weather unless the packages are: (i) sole packages of more than 20 l capacity (ii) of metallic or plastic construction (iii) securely closed and are not to be opened in the storage area (iv) stored in such a manner that rain water, contaminated with the material, is collected and disposed of safely.
- Packages must NOT be located in a basement or other place below ground level.
- The store has a smooth non-combustible floor or a floor coated to prevent impregnation by the material.
- There are no open drains, traps, tunnels or pits under the floor where molten material might collect or be confined.
- Drainage must be provided so that in the event of fire, molten material may be collected and confined.
- Drainage and kerbing must be provided so that in the event of fire, molten material will flow clear of buildings and other storage areas.
- Pallets and dunnage used to store the material must be coated to prevent impregnation
- Materials for absorbing and neutralising spills must be kept near the storage.
- Adequate portable fire extinguishers are provided.
- Ensure proper stock-control measures are maintained to prevent prolonged storage of dangerous goods.
- Store in original containers in an isolated approved flammable materials storage area.
- Keep containers securely sealed as supplied.
- **WARNING:** Gradual decomposition during storage in sealed containers may lead to a large pressure build-up and subsequent explosion.
- No smoking, naked lights, heat or ignition sources.
- Store in a cool, dry, well ventilated area.
- Store under cover and away from sunlight.
- Store below safe storage (control) temperature. Always store below 35 deg.C.
- Store away from flammable or combustible materials, debris and waste. Contact may

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## Section 7 - HANDLING AND STORAGE

cause fire or violent reaction.

- Store away from incompatible materials.
- Store away from foodstuff containers
- DO NOT stack on wooden floors or wooden pallets.
- Protect containers against physical damage.
- Check regularly for spills and leaks.
- Observe manufacturer's storage and handling recommendations.
- Keep locked up.
- Restrictions may apply on quantities and to other materials permitted in the same location.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA mg/m <sup>3</sup>
Australia Exposure Standards	dibenzoyl peroxide (Benzoyl peroxide)	5
Australia Exposure Standards	dicyclohexyl phthalate (Inspirable dust (not otherwise classified))	10
Australia Exposure Standards	silica, dimethylsiloxane treated (Inspirable dust (not otherwise classified))	10

The following materials had no OELs on our records

- butyl benzyl phthalate: CAS:85- 68- 7
- bisphenol A/ epichlorohydrin resin: CAS:25068- 38- 6
- bisphenol F/ epichlorohydrin copolymer: CAS:9003- 36- 5 CAS:55492- 52- 9

### MATERIAL DATA

Not available. Refer to individual constituents.

### INGREDIENT DATA

BISPHENOL A/ EPICHLOROHYDRIN RESIN:

BISPHENOL F/ EPICHLOROHYDRIN COPOLYMER:

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

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### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus

increasing the risk of overexposure.

DICYCLOHEXYL PHTHALATE:

SILICA, DIMETHYLSILOXANE TREATED:

BISPHENOL A/ EPICHLOROHYDRIN RESIN:

BISPHENOL F/ EPICHLOROHYDRIN COPOLYMER:

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

$OSF = \frac{\text{Exposure Standard (TWA) ppm}}{\text{Odour Threshold Value (OTV) ppm}}$

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

DIBENZOYL PEROXIDE:

The recommendation for the TLV-TWA is based on the absence of subjective symptoms of irritation of the nose and throat in humans exposed to 5.25 mg/m<sup>3</sup>. Whether this is sufficiently low to prevent cumulative effects in man is not known.

BUTYL BENZYL PHTHALATE:

No exposure limits set by NOHSC or ACGIH.

OES TWA: 5 mg/m<sup>3</sup>

CEL TWA: 3 mg/m<sup>3</sup>; STEL: 5 mg/m<sup>3</sup>

[compare OEL TWA (Sweden): 3 mg/m<sup>3</sup>; STEL: 5 mg/m<sup>3</sup>]

DICYCLOHEXYL PHTHALATE:

OES TWA: 5 mg/m<sup>3</sup>

BISPHENOL A/ EPICHLOROHYDRIN RESIN:

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their

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### Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

## PERSONAL PROTECTION

### EYE

- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

### HANDS/FEET

- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.
- DO NOT wear cotton or cotton-backed gloves.
- DO NOT wear leather gloves.
- Promptly hose all spills off leather shoes or boots or ensure that such footwear is protected with PVC over-shoes.
- NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

### OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

### RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	A- AUS P	-
1000	50	-	A- AUS P
5000	50	Airline *	-
5000	100	-	A- 2 P
10000	100	-	A- 3 P
	100+		Airline**

\* - Continuous Flow

\*\* - Continuous-flow or positive pressure demand.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.  
For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Black paste with a characteristic odour; does not mix with water.

### PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Sinks in water.

Molecular Weight: Not applicable  
Melting Range (°C): Not available  
Solubility in water (g/L): Immiscible  
pH (1% solution): Not applicable  
Volatile Component (%vol): Not available  
Relative Vapour Density (air=1): Not available  
Lower Explosive Limit (%): Not applicable  
Autoignition Temp (°C): Not applicable  
State: Non slump paste

Boiling Range (°C): Not available  
Specific Gravity (water= 1): 1.12  
pH (as supplied): Not applicable  
Vapour Pressure (kPa): Not available  
Evaporation Rate: Not available  
Flash Point (°C): Not applicable

Upper Explosive Limit (%): Not applicable  
Decomposition Temp (°C): Not available  
Viscosity: 2085- 1 cSt@40°C

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable under normal handling conditions.
- Prolonged exposure to heat.
- Hazardous polymerisation will not occur.

NOTE: A range of exothermic decomposition energies for peroxides is given as 200-340 kJ/mol.

The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy releases per unit of mass, rather than on a molar mass basis (J/g) be used in the assessment. BRETHERICK: Handbook of Reactive Chemical Hazards, 4th Edition.

Avoid strong acids, oxidisers, reducing agents, metals, metal oxides, transition metals and their compounds, amines and combustibles, especially those which are finely divided.

DO NOT use brass or copper containers or stirrers.

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

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## Section 11 - TOXICOLOGICAL INFORMATION

### ACUTE HEALTH EFFECTS

#### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual. Ingestion of organic peroxides may produce nausea, vomiting, abnormal pain, stupor, bluish discoloration of skin and mucous membranes. Inflammation of the heart muscle may also occur.

The toxicity of phthalates is not excessive due to slow oral absorption and metabolism. Absorption is affected by fat in the diet. Repeated doses can cause cumulative toxic effects, and symptoms include an enlarged liver which often reverses if exposure is maintained. Carbohydrate metabolism is disrupted, and cholesterol and triglyceride levels in the blood falls. There can also be withering of the testicles. Some phthalates can increase the effects of antibiotics, thiamine (vitamin B1) and sulfonamides.

#### EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn).

Eye contact with organic peroxides can cause clouding, redness, swelling and burns of the eye on prolonged contact.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

#### SKIN

The material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.

All organic peroxides are irritating to the skin and if allowed to remain on the skin, may produce inflammation; some are allergenic.

Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

#### INHALED

The inhalation of organic peroxide dusts or vapours can produce throat and lung irritation and cause an asthma-like effect. Over-exposure can cause tears, salivation, lethargy, slow breathing, breathing difficulties, headache, weakness, tremor, stupor and swelling of the lung.

The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product.

#### CHRONIC HEALTH EFFECTS

Persistent exposure over a long period of time to peroxides produces allergic skin reactions (redness and scaling of the skin) and asthmatic wheezing.

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.

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Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

Exposure to phthalates over years leads to pain, numbness and spasms in the hands and feet. Many people have developed multiple disorders in the nervous system and the balancing system. Levels of sex hormones are reduced in women, leading to missed ovulations and miscarriages. They also reduce sperm counts and fertility in men. They mimic certain sex hormones and can damage the foetus. Phthalates are found in paints, inks and glues.

Bisphenol A may have effects similar to female sex hormones and when administered to pregnant women, may damage the foetus. It may also damage male reproductive organs and sperm.

One ingredient of the product has caused skin sensitisation reactions, shown as localised reddening and hives, or may produce respiratory sensitisation characterised by asthma-like symptoms and runny nose.

## TOXICITY AND IRRITATION

None assigned. Refer to individual constituents.

### DIBENZOYL PEROXIDE:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

#### TOXICITY

Oral (rat) LD50: 7710 mg/kg

Inhalation (human) TCl<sub>0</sub>: 12 mg/m<sup>3</sup>

Subcutaneous (Rat) LD: 40 mg/kg (@ 50%)

Intraperitoneal (Mouse) LD50: 440 mg/kg

Intravenous (Rabbit) LD: 16 mg/kg

#### IRRITATION

Eye (rabbit): 500 mg/24h - Mild

Skin effects (MAK): very weak

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

The material may be irritating to the eye, with prolonged contact causing inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

### BUTYL BENZYL PHTHALATE:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

#### TOXICITY

Oral (rat) LD50: 2330 mg/kg

Oral (rat) LD50: 20400 mg/kg\* \*\*

[MONSANTO]\*\*

Dermal (rabbit) LD50: >10, 000 mg/kg\*

[BASF]\*

Dermal (mammal) LD50: 13, 100 mg/kg\*\*

#### IRRITATION

Nil Reported

The material may produce peroxisome proliferation. Peroxisomes are single, membrane

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limited organelles in the cytoplasm that are found in the cells of animals, plants, fungi, and protozoa. Proxisome proliferators include certain hypolipidaemic drugs, phthalate ester plasticisers, industrial solvents, herbicides, food flavours, leukotriene D4 antagonists and hormones. Animal studies have shown that peroxisome proliferators clearly cause cancer, especially of the liver.

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Reproductive effector in rats.

#### DICYCLOHEXYL PHTHALATE:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

##### TOXICITY

Oral (rat) LD50: 30000 mg/kg

##### IRRITATION

Nil Reported

#### SILICA, DIMETHYLSILOXANE TREATED:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

##### TOXICITY

Oral (rat) LD50: >5000 mg/kg

##### IRRITATION

Skin: 0/8 non- irritating  
Eyes: 0.7/110 @ 24hr Draize  
non-irritating

[Cabot]

#### BISPHENOL A/ EPICHLOROHYDRIN RESIN:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

##### TOXICITY

Oral (rat) LD50: 13600 mg/kg

Oral (rat) LD50: 11400 mg/kg

Intraperitoneal (rat) LD50: 2400 mg/kg

Oral (mouse) LD50: 15600 mg/kg

Intraperitoneal (mouse) LD50: 4000 mg/kg

##### IRRITATION

Nil Reported

Eye (rabbit): 100 mg - Mild

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

The material may produce severe irritation to the eye causing pronounced inflammation.

Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

for RTECS No: SL 6475000:

(liquid grade)

Equivocal tumourigen by RTECS criteria

Somnolence, dyspnea, peritonitis

#### BISPHENOL F/ EPICHLOROHYDRIN COPOLYMER:

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

continued...

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### Section 11 - TOXICOLOGICAL INFORMATION

#### TOXICITY

Oral (rat) LD50: >5000 mg/kg

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

#### IRRITATION

Nil Reported

#### MATERIAL

#### CARCINOGEN

#### REPROTOXIN

#### SENSITISER

#### SKIN

dibenzoyl

IARC:3

peroxide

butyl benzyl

IARC:3

phthalate

#### CARCINOGEN

IARC: International Agency for Research on Cancer (IARC) Carcinogens: dibenzoyl peroxide Category: The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.

#### CARCINOGEN

IARC: International Agency for Research on Cancer (IARC) Carcinogens: butyl benzyl phthalate Category: The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.

### Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.

Water hazard class 2 (self-assessment): hazardous to water.

Refer to data for ingredients, which follows:

#### DIBENZOYL PEROXIDE:

Half- life Soil - High (hours):	48
Half- life Soil - Low (hours):	4
Half- life Air - High (hours):	510
Half- life Air - Low (hours):	51
Half- life Surface water - High (hours):	168
Half- life Surface water - Low (hours):	24
Half- life Ground water - High (hours):	336
Half- life Ground water - Low (hours):	48
Aqueous biodegradation - Aerobic - High (hours):	168
Aqueous biodegradation - Aerobic - Low (hours):	24
Aqueous biodegradation - Anaerobic - High (hours):	672
Aqueous biodegradation - Anaerobic - Low (hours):	96
Photolysis maximum light absorption - High (nano- m):	275
Photolysis maximum light absorption - Low (nano- m):	235
Photooxidation half- life air - High (hours):	510

continued...

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## Section 12 - ECOLOGICAL INFORMATION

Photooxidation half- life air - Low (hours): 51

DO NOT discharge into sewer or waterways.

### BUTYL BENZYL PHTHALATE:

Fish LC50 (96hr.) (mg/l):	1.7- 5.3
Daphnia magna EC50 (48hr.) (mg/l):	0.26- 0.76
log Pow (Verschuereen 1983):	4.78
Half- life Soil - High (hours):	168
Half- life Soil - Low (hours):	24
Half- life Air - High (hours):	60
Half- life Air - Low (hours):	6
Half- life Surface water - High (hours):	168
Half- life Surface water - Low (hours):	24
Half- life Ground water - High (hours):	4320
Half- life Ground water - Low (hours):	48
Aqueous biodegradation - Aerobic - High (hours):	168
Aqueous biodegradation - Aerobic - Low (hours):	24
Aqueous biodegradation - Anaerobic - High (hours):	4320
Aqueous biodegradation - Anaerobic - Low (hours):	672
Aqueous photolysis half- life - Low (hours):	876000
Photooxidation half- life air - High (hours):	60
Photooxidation half- life air - Low (hours):	6

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.

The phthalate esters are distributed throughout the environment ubiquitously. They are found complexed with fulvic acid components of the humic substances in soil and marine and estuarine waters. Fulvic acid appears to act as a solubiliser for the otherwise insoluble ester and serves to mediate its transport and mobilisation in water or immobilisation in soil. Phthalate esters have been found in open ocean environments, in deep sea jelly fish, Atlantic herring and in mackerel. Phthalic ester plasticisers are clearly recognised as general contaminants of almost every soil and water ecosystem. In general they have low acute toxicity but the weight of evidence supporting their carcinogenicity is substantial. Other subtle chronic effects have also been reported. As little as 4 ug/ml in culture medium is lethal to chick embryo heart cells. This concentration is similar to that reached in human blood stored in vinyl plastic bags for as little as one day. Some phthalates (notably di2-ethylhexyl phthalate and dibutyl phthalate) may also be detrimental to the reproduction of the water flea (*Daphnia magna*), zebra fish and guppies. As phthalates are present in drinking water and food, concerns have been raised about their long term effects on humans.

DO NOT discharge into sewer or waterways.

log Kow: 4.78-4.91

Half-life (hr) air: 24-120

Henry's atm m<sup>3</sup> /mol: 1.30E-06

BCF: 663

Toxicity Fish: LC50(96)1.7-43mg/L

Toxicity invertebrate: LC50(96)3.7mg/L

Bioaccumulation: little

Anaerobic effects: sig degrad

Effects on algae and plankton: LC50(96)0.4-1mg/L

Degradation Biological: sig

continued...



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processes Abiotic: not sig

## BISPHENOL A/ EPICHLOROHYDRIN RESIN:

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

DO NOT discharge into sewer or waterways.

## BISPHENOL F/ EPICHLOROHYDRIN COPOLYMER:

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Environmental toxicity is a function of the n-octanol/ water partition coefficient (log Pow, log Kow). Phenols with log Pow >7.4 are expected to exhibit low toxicity to aquatic organisms. However the toxicity of phenols with a lower log Pow is variable, ranging from low toxicity (LC50 values >100 mg/l) to highly toxic (LC50 values <1 mg/l) dependent on log Pow, molecular weight and substitutions on the aromatic ring. Dinitrophenols are more toxic than predicted from QSAR estimates. Hazard information for these groups is not generally available.

DO NOT discharge into sewer or waterways.

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible. Special hazard may exist - specialist advice may be required.
  - Consult manufacturer for recycling options.
  - Consult State Land Waste Management Authority for disposal.
  - Bury or incinerate residue at an approved site.
  - Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
  - Puncture containers to prevent re-use and bury at an authorised landfill.
  - Containers may still present a chemical hazard/ danger when empty.
  - Return to supplier for reuse/ recycling if possible.
- Otherwise:
- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
  - Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

## Section 14 - TRANSPORTATION INFORMATION



Labels Required: ORGANIC PEROXIDE  
HAZCHEM: 2W

continued...

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### Section 14 - TRANSPORTATION INFORMATION

UNDG:  
Dangerous Goods 5.2 Subrisk: None, None  
Class:  
UN Number: 3108 Packing Group: II  
Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

#### Air Transport IATA:

ICAO/IATA Class: 5.2 ICAO/IATA Subrisk: None  
UN/ID Number: 3108 Packing Group: II  
Special provisions: A14 A20  
Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID \* †

#### Maritime Transport IMDG:

IMDG Class: 5.2 IMDG Subrisk: None  
UN Number: 3108 Packing Group: II  
EMS Number: F- J, S- R Special provisions: 122 274 323  
Limited Quantities: 500 g  
Shipping Name: ORGANIC PEROXIDE TYPE E, SOLID

### Section 15 - REGULATORY INFORMATION

#### POISONS SCHEDULE: None

#### REGULATIONS

AC100e Part B (CAS: None):  
No regulations applicable

dibenzoyl peroxide (CAS: 94-36-0) is found on the following regulatory lists;

Australia - Victoria Occupational Health and Safety Regulations - Schedule 9: Materials at Major Hazard Facilities (And Their Threshold Quantity) Table 2  
Australia Dangerous Goods Code (ADG Code) - Goods Too Dangerous To Be Transported  
Australia Dangerous Goods Code Draft 7th Edition - Organic Peroxides  
Australia Exposure Standards  
Australia Hazardous Substances  
Australia Inventory of Chemical Substances (AICS)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 2  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5  
International Agency for Research on Cancer (IARC) Carcinogens  
International Air Transport Association (IATA) Dangerous Goods Regulations  
OECD Representative List of High Production Volume (HPV) Chemicals

butyl benzyl phthalate (CAS: 85-68-7) is found on the following regulatory lists;

Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)  
Australia - Australian Capital Territory Environment Protection Regulation Ecosystem maintenance - Organic chemicals - Non-pesticide anthropogenic organics  
Australia Inventory of Chemical Substances (AICS)  
IMO IBC Code Chapter 17: Summary of minimum requirements  
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk  
International Agency for Research on Cancer (IARC) Carcinogens  
OECD Representative List of High Production Volume (HPV) Chemicals  
OSPAR List of Substances of Possible Concern

dicyclohexyl phthalate (CAS: 84-61-7) is found on the following regulatory lists;

Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)  
Australia - Australian Capital Territory Environment Protection Regulation Ecosystem maintenance - Organic chemicals - Non-pesticide anthropogenic organics  
Australia Exposure Standards  
Australia Inventory of Chemical Substances (AICS)  
International Council of Chemical Associations (ICCA) - High Production Volume List  
OECD Representative List of High Production Volume (HPV) Chemicals

silica, dimethylsiloxane treated (CAS: 67762-90-7) is found on the following regulatory lists;

Australia Exposure Standards  
Australia Inventory of Chemical Substances (AICS)  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix C  
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4  
IMO IBC Code Chapter 17: Summary of minimum requirements  
OECD Representative List of High Production Volume (HPV) Chemicals

bisphenol A/ epichlorohydrin resin (CAS: 25068-38-6) is found on the following regulatory lists;

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## Section 15 - REGULATORY INFORMATION

Australia Hazardous Substances

Australia Inventory of Chemical Substances (AICS)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5

OECD Representative List of High Production Volume (HPV) Chemicals

bisphenol F/ epichlorohydrin copolymer (CAS: 9003-36-5) is found on the following regulatory lists;

Australia Inventory of Chemical Substances (AICS)

bisphenol F/ epichlorohydrin copolymer (CAS: 55492-52-9) is found on the following regulatory lists;

Australia Inventory of Chemical Substances (AICS)

## Section 16 - OTHER INFORMATION

### Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
butyl benzyl phthalate	85- 68- 7	N; R50/53
dicyclohexyl phthalate	84- 61- 7	N; R50/53

### INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
bisphenol F/ epichlorohydrin copolymer	9003- 36- 5, 55492- 52- 9

### EXPOSURE STANDARD FOR MIXTURES

"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:

Composite Exposure Standard for Mixture (TWA) :3.75 mg/m<sup>3</sup>.

Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded,

"Worst Case" considerations deem the individual to be overexposed.

Component	Breathing Zone ppm	Breathing Zone mg/m <sup>3</sup>	Mixture Conc (%)
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Component	Breathing Zone (mg/m <sup>3</sup> )	Mixture Conc (%)
butyl benzyl phthalate	1.8750	40.0
dicyclohexyl phthalate	1.8750	40.0

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net/references](http://www.chemwatch.net/references).

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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